Chapter 9 – Project Sustainability: Sub-watershed Action Plans

Identifying and Analyzing Proposed, Programs, Policies, and Ordinances

The stakeholder group consisted of local governmental officials, local agencies of the state and federal government and other interested parties, from this group discussions ensued regarding the amount of planning that is done in the watershed at the township level. A review sheet will be developed to determine the status of all local governments in the review process. It is known that Monitor Township and Bangor Township have planning commissions in place and site development projects are reviewed on a routine basis. It is also known that site drainage is reviewed by the Bay County Drain Commissioner for all developments over one acre in size and if they are discharging to an established county drain. Furthermore, if a Township has an established procedure in place to authorize the BCDC to review development plans for stormwater quantity and quality on their behalf, that will also take place during the review process.

A project is planned to collect information on local governments within the watershed, if not all areas then minimally those subwatersheds that are deemed critical to the recovery of the Kawkawlin River with take place by the end of 2011. The data collected and reviewed will consist of:

- Master Plans
- Recreational Plans
- Zoning Ordinances
- Building Plan Review process and ordinances

A letter will be developed and sent to Townships, and county commission and agencies to gather this information as it relates to water quality. Once this regulatory review is completed a report will be generated with recommendations to the local governing entities on how to amend or implement in their existing plans a format to assist with addressing water quality on a local level.

Summary of Planning efforts for Sub-watershed Implementation

The stakeholders and property owners have had numerous meetings during the planning process to discuss priorities and the significant issues of the watershed. The priorities have been identified and essentially have not changed since the start of the planning process in 2008. The following are to be considered high priority and are listed to help focus efforts for the next ten years of implementation projects. The critical subwatersheds were discussed in Chapter 3 and listed in order of priority as Subwatershed 7 was ranked as the number one priority, followed by Subwatersheds 6, 3, 2, 5, 8, 4 and 1. The highest priority subwatersheds are located in the most intensively farmed portion of the Kawkawlin watershed and are impacted by overland sediment and nutrient pollution. The lowest ranking sub, number 1, is located in the northern portion

of the Kawkawlin watershed, which contains much more wetland and forested land. The primary issue of concern in Sub 1 appears to be livestock access and streambank erosion. The following is a potential implementation plan based on the top issues as presented to the planners involved in development of this WMP.

- *E.coli* and pathogens – The focus will be on education and surveys in the Main Branch of the Kawkawlin as is relates to failing on site treatment systems and efforts on the North and South Branch of the Kawkawlin will focus on hobby farms and livestock access points to the river.
  - Development of an I&E program for small and mid size horse management on small hobby farms or parcels in the watershed.
  - Continue implementation and upgrade the monitoring program for the region.
- Establish an on site treatment system failure recognition program – focus on subwatershed 8 which was recognized as the critical subwatershed for pathogen issues
  - Efforts will be taken to obtain funding to develop a long term program in the watershed to upgrade on site treatment systems, educate owners and upgrade records and the newly established database to help develop an analytical approach to solving the issues related to pathogens and water quality.
  - Development of a database to identify and locate failing on site treatment systems and map them. Develop a long term strategy to bring in municipal sanitary systems. Determine funding options for such projects.
  - Bay County Health Department is taking the lead in addressing this issue in the watershed. They have been identifying areas along the main branch of the Kawkawlin that have the high potential for failing on site treatment systems. Further work needs to be completed on the discovery and elimination of this source of pathogens and nutrients in this reach of the Kawkawlin.
  - Establish a program to address failing on site treatment system that can help the homeowner in replacement or repair of the system through financial assistance.
  - Develop an inspection program through a regulatory mechanism and support adoption of a statewide consistent and comprehensive Sanitary Code.

- Implement practices which will result in the reduction of sediment loading in the Kawkawlin River.
  - Implement agricultural BMPs such as vegetated buffer strips, vegetated swales and outlets.
  - Use of innovative BMPs for surface drainage V-ditches such as vegetated outlet areas, check dams, stone filters, filter sump outlets.
  - Use of check dams and sediment traps in drains at agricultural surface point sources to encourage the deposition of sediment loads as they leave the fields.

- Other BMPs designated as sediment reduction practices.
- Streambank stabilization using "green" techniques.
- Reduction of sedimentation in drains to prevent load from entering river system.
- Use of BMPs to prevent sediment from leaving county drains and entering system
- Addressing crossing erosion sites in subwatershed 7's upper reach.

- Implement an I&E program to address sediment issues in the watershed with concentration on farms that are not participating in NRCS or Farm Bureau programs or education.
  - Implement I&E related to farming in areas with flood recurrence incidence of 90% or greater.

- Protection of areas of the watershed by establishment of green zones with conservation easements in critical sub watersheds.

- Implement monitoring programs related to sedimentation issues.

- Remove former and abandoned petroleum pipeline crossings in the watershed to prevent potential pollutants in the future as these metal pipes age and corrode and present an increase risk to the watershed.

- Nutrients are a major issue in the watershed and create problems such as algal blooms, excessive growth rates of aquatic plants and effect water quality.
  - Continue I&E program on phosphorus in the watershed and its associated issues.
  - Implement strategies as recommended in the Saginaw Bay Phosphorus Report of 2009.
  - Establish a sediment monitoring program to identify areas of nutrient "hot spots" and target sediment areas for removal from the watershed, especially in areas with anoxic conditions.

- Establish a wetland restoration strategy for the watershed using the tools developed by the DNRE.
  - Encourage townships in the watershed to use the wetland tool developed by the DNRE in land use and development conditions.
  - Develop and implement the I&E strategy for wetlands.

- Assess altered hydrology in North Branch (sub watershed 2) for determination of the oxygen depletion that is an issue.
  - Assess areas of flow diversions that create stagnant water situations that could be cause of the anoxic conditions in the 8 mile reach of the North Branch that has a Low DO TMDL.

    - Implement BMPs to increase centralized flows in these areas during low flow conditions and protect the floodplain utilization during high flow periods.

- Assess and correct localized recurrent flooding in areas of sub watershed 3.
    - Determine annual cause for flooding and address the problem.

- Implement a review process to assess the land use planning, review process for local governments within the watershed. Use this information toward development of an I&E strategy for local government.
    - Update community recreational and master plans to reflect the goals and objectives of the Kawkawlin WMP.

As the implementation of this plan moves forward it will be necessary over time to reassess this plan and update it with new strategies, objectives and determine if goals of the watershed have changed with time. If portions of the project meet with substantial success goals may develop lower or higher priorities and this plan must change to meet the newer implementation climate.

Conclusions

The stakeholders of the watershed have expressed their desire to have a successful implementation of the watershed management plan. They have invested a considerable amount of time, patience and effort to get to the implementation stage of this watershed management plan. This plan will be an implementation tool for those wishing to address problems in the watershed. This plan should be reviewed and updated every three years by the original stakeholder committee. It will be the Bay County Drain Commissioner's or their designee's task to keep moving forward with this project and implement as many aspects of this plan as funding can be found or established.

The overall goal of the plan is to develop a riverine system that the stakeholders are proud of and that the beneficial uses for the watershed are again a resource for the communities of the watershed. The value and health of each watershed around the Greater Saginaw Bay is crucial to the effort to delist the beneficial use impairments of the Saginaw Bay. The effort put into the restoration of the Kawkawlin River and watershed will assist in the delisting process that has begun over the past two years in the Bay. As the watershed and Bay improve in water quality so will the economic and recreational quality of life in the Kawkawlin Watershed. The goals of the watershed are as presented in the first meetings:

- Protect and improve the warm water fisheries and conditions for the river system.

- Protect and improve habitat and conditions for other aquatic life and wildlife along the river.

- Determine causes and correction of sediment loading in the river.

- Identify and protect quality natural features including forested areas, floodplains, wetlands, riparian buffers, contiguous greenway buffers.
- Provide for flood management.
- Provide and improve water recreation opportunities and public access to the river.
- Preserve the rural character (farmland and open spaces) of the watershed.
- Maintain and/or increase the aesthetics of the water resources.

By remaining faithful to these goals and developing objectives to reach to these goals and accomplish them this plan will be a good tool to assist those willing to use it. Overall, the vision of the stakeholders and property owners is to have an aesthetically pleasing river to pursue recreational opportunities in a clean and healthy environment.